Kadar -Amyloid plasma pada penyemprot pestisida laki-laki dan hubungan dengan intensitas pajanan pestisida jangka panjang (Studi di Jawa Barat, Indonesia) = -Amyloid plasma levels among male plantation pesticide sprayers and it's association with intensity of long term pesticide exposure (Study in a sub-district in West Java, Indonesia)

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Abstrak

Pendahuluan: Pestisida, salah satunya organofosfat masih banyak digunakan untuk meningkatkan hasil produksi pertanian, karena efektif dalam pengendalian hama. Efek pajanan kronis organofosfat terhadap manusia belum diketahui secara jelas. Indonesia merupakan negara agrikultural dan termasuk negara pengguna pestisida terbanyak. Terdapat beberapa bukti, bahwa paparan perstisida dalam jangka panjang, dapat menyebabkan gangguan neurologis, dengan peningkatan kadar b-amyloid plasma, yang dapat meningkatkan risiko risiko terjadinya penyakit Alzheimer.
Tujuan: Penelitian ini bertujuan untuk mengidentifikasi kadar b-amyloid plasma pada laki-laki penyemprot pestisida di perkebunan dan mengetahui apakah terdapat hubungan dengan intensitas pajanan pestisida jangka panjang.
Metode: : Studi cross-sectional pada penyemprot pestisida di perkebunan yang sudah menggunakan pestisida organofosfat dan/atau karbamat selama enam bulan. Pengumpulan data dilakukan pada pagi hari sebelum mulai bekerja, dengan cara mewawancara dan mengambil sampel darah vena dari fossa cubiti, kemudian dianalisis menggunakan metode LC-MS. Jumlah responden yang memenuhi kriteria inklusi dan masuk dalam penelitian ini yaitu 57 responden. Intensitas pajanan pestisida dinilai dengan metode skoring, yang sudah digunakan sebelumnya dan sudah dimodifikasi Agricultural Health Study di Amerika Serikat dan disesuaikan dengan situasi di Indonesia.
Hasil: Sebanyak 91,2% pekerja mengalami peningkatan kadar -Amyloid plasma. Skor intensitas pajanan pestisida jangka panjang antara 45 sampai 300, dengan nilai median 260. Berdasarkan analisis bivariat secara korelasi antara kadar b-amyloid plasma dengan total skor kumulatif intensitas pajanan didapatkan korelasi rendah (r=0.243) dan memiliki korelasi linier berbanding lurus, di mana peningkatan skor total kumulatif intensitas memberikan peningkatan kadar -amyloid plasma sebesar 4,6%, tetapi tidak bermakna secara statistik.
Kesimpulan: Berdasarkan penelitian ini, tidak ada hubungan antara kadar -amyloid plasma dengan intensitas pajanan pestisida.
.....Introduction: The use of pesticides, especially organophosphates are still very often to increase agricultural production, because it is effective in pest control. Indonesia is an agricultural country, which is among the highest user of pesticides The effect of chronic organophosphate exposure on humans health is not fully understood yet. There are some evidence that long term exposure to pesticides can lead to neurologic diseases, among others by increasing b-amyloid plasma

levels,which can lead to Alzheimer disease..
Objective: This study aims to identify b-amyloid plasma levels among male plantation pesticide sprayer and determine if there is an association with the intensity of longterm pesticide exposure.
Methods: A Cross-sectional study was conducted among pesticide sprayers on plantations, that have used organophosphate and / or carbamate pesticides for at least the last six months. Data was collected in the morning before working, by interviewing and taking venous blood sample. The blood sample was analyzed using the LCMS Method to measure b-amyloid plasma levels. Fifty-seven subjects were included in this study. The intensity of long term exposure to pesticides was assessed using a scoring method, that has been used before. which is modified from the Agricultural Health Study.and adjusted to the situation in Indonesia.
Results: As many as 91.2% workers had plasma -amyloid levels above normal. While the intensity score for long term pesticide exposure was between 45 to 300 with a median 260. Using correlation analysis, No significant correlation between b-amyloid plasma levels and total cumulative intensity exposure score was found ($r = 0.243$, $p>0,05$),.
Conclusion: Based on this study, 91.2% had high levels of b-amyloid plasma and no relationship between intensity of pesticide exposure with plasma -amyloid levels was found